

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-33. (cancelled).

34. (original) A plasma processing method using a plasma device comprising a container, the inside of which can be internally decompressed, and part of the inside being formed of a first dielectric plate made of material capable of passing microwaves with almost no loss, a gas supply system for supplying essential source material gas so as to cause excitation of plasma inside the container, an exhaust system for expelling source material gas that has been supplied inside the container and decompressing the inside of the container, an antenna, located facing an outer surface of the first dielectric plate and comprised of a slot plate and a waveguide dielectric, for radiating microwaves, and an electrode for holding an object to be treated located inside the container, a surface of the object to be treated that is to be subject to plasma processing and a microwave radiating surface of the antenna being arranged in parallel substantially opposite to each other, and the plasma device carrying out plasma processing for the object to be treated, the power density of microwaves to be input being 1.2 W/cm^2 or more.

35-73. (cancelled).

74. (new) The plasma processing method as claimed in Claim 34, wherein said gas is substantially uniformly supplied through a second dielectric plate provided between said first dielectric plate and said electrode for holding the object to be processed.

75. (new) The plasma processing method as claimed in Claim 74, wherein a pressure of a first space between said first dielectric plate and said second dielectric plate is made higher than a pressure of a second space in which said electrode is located and which is surrounded by said second dielectric plate and a wall section of said container other than said second dielectric plate.

76. (new) A plasma processing method using a plasma device comprising the steps of:

using a decompressible container subject to microwaves from an antenna slot plate and for containing a microwave generated plasma therewithin, there being a first dielectric plate transparent to the microwaves, an electrode for holding an object to be treated within the container;

feeding a source material gas through a gas supply port into an inside of the container;

operating the plasma device to plasma process the object to be treated, the power density of microwaves to be input being 1.2 W/cm^2 or more; and

decompressing the container by exhausting the inside of the container.

77. (new) The plasma processing method as claimed in Claim 76, wherein said gas is substantially uniformly supplied through a second dielectric plate provided between said first dielectric plate and said electrode for holding the object to be processed.

78. (new) The plasma processing method as claimed in Claim 77, wherein a pressure of a first space between said first dielectric plate and said second dielectric plate is made higher than a pressure of a second space in which said electrode is located and which is surrounded by said second dielectric plate and a wall section of said container other than said second dielectric plate.

79. (new) A plasma processing method, comprising the steps of:

using a plasma device comprising an internally decompressible container and including an interior first dielectric plate made of material for passing microwaves, a gas

supply system for supplying essential source material gas so as to cause excitation of a plasma inside the container, an exhaust system for expelling source material gas that has been supplied inside the container and decompressing the inside of the container, an antenna, located facing an outer surface of the first dielectric plate and comprised of a slot plate and a waveguide dielectric, for radiating microwaves, and an electrode for holding an object to be treated located inside the container, a surface of the object to be treated that is to be subject to plasma processing and a microwave radiating surface of the antenna being arranged in parallel substantially opposite to each other; and

carrying out plasma processing of the object to be treated while providing the plasma device with a power density of input microwaves of 1.2 W/cm^2 or more.

80. (new) The plasma processing method as claimed in Claim 79, wherein said gas is substantially uniformly supplied through a second dielectric plate provided between said first dielectric plate and said electrode for holding the object to be processed.

81. (new) The plasma processing method as claimed in Claim 80, wherein a pressure of a first space between said first dielectric plate and said second dielectric plate is made higher

than a pressure of a second space in which said electrode is located and which is surrounded by said second dielectric plate and a wall section of said container other than said second dielectric plate.